

IN THE CLAIMS

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Claims 1-7. (Canceled)

8. (New) A magnetic tunnel effect type magnetic head comprising:

a magnetic tunnel junction element sandwiched with upper and lower conductive gap layers between upper and lower magnetic shielding layers,

wherein at least one of the conductive gap layers is formed from at least one nonmagnetic metal layer containing a metal element selected from Ta, Ti, Cr, W, Mo, V, Nb and Zr, wherein the magnetic tunnel junction element includes a free layer on a fixed layer, and wherein a width of the free layer is equal to or less than a width of the fixed layer.

9. (New) The magnetic tunnel effect type magnetic head according to claim 8, wherein the conductive gap layer is formed from at least two nonmagnetic metal layers including a metal layer containing a metal element selected from Ta, Ti, Cr, W, Mo, V, Nb and Zr and a metal layer containing a metal element selected from Al, Pt, Cu and Au.

10. (New) A recorder/player which records and/or plays back a signal to and/or from a magnetic recording medium comprising:

a magnetic tunnel effect type magnetic head having a magnetic tunnel junction element sandwiched with conductive gap layers between a pair of magnetic shielding layers,

wherein at least one of the conductive gap layers is formed from at least one nonmagnetic metal layer containing a metal element selected from Ta, Ti, Cr, W, Mo, V, Nb and Zr, wherein the magnetic tunnel junction element includes a free layer on a fixed layer, and wherein a width of the free layer is equal to or less than a width of the fixed layer.

11. (New) The recorder/player according to claim 10, wherein the conductive gap layer is formed from at least two nonmagnetic metal layers including a metal layer containing a metal element selected from Ta, Ti, Cr, W, Mo, V, Nb and Zr and a metal layer containing a metal element selected from Al, Pt, Cu and Au.

12. (New) A magnetic tunnel effect type magnetic head comprising:

a magnetic tunnel junction element sandwiched with upper and lower conductive gap layers between upper and lower magnetic shielding layers,

wherein at least one of the conductive gap layers is formed from at least one nonmagnetic metal layer containing a metal element selected from Ti, Mo, V, Nb and Zr.

13. (New) The magnetic tunnel effect type magnetic head according to claim 12, wherein the conductive gap layer is formed from at least two nonmagnetic metal layers including a metal layer containing a metal element selected from Ti, Mo, V, Nb and Zr and a metal layer containing a metal element selected from Al, Pt, Cu and Au.

14. (New) A recorder/player which records and/or plays back a signal to and/or from a magnetic recording medium comprising:

a magnetic tunnel effect type magnetic head having a magnetic tunnel junction element sandwiched with conductive gap layers between a pair of magnetic shielding layers,

wherein at least one of the conductive gap layers is formed from at least one nonmagnetic metal layer containing a metal element selected from Ti, Mo, V, Nb and Zr.

15. (New) The recorder/player according to claim 14, wherein the conductive gap layer is formed from at least two nonmagnetic metal layers including a metal layer containing a metal

element selected from Ti, Mo, V, Nb and Zr and a metal layer containing a metal element selected from Al, Pt, Cu and Au.

16. (New) A magnetic tunnel effect type magnetic head comprising:

a magnetic tunnel junction element sandwiched with upper and lower conductive gap layers between upper and lower magnetic shielding layers,

wherein at least one of the conductive gap layers is formed from at least one nonmagnetic metal layer containing a metal element selected from Ta, Ti, Cr, W, Mo, V, Nb and Zr, and wherein the upper conductive gap layer forms a projection which abuts a portion of the magnetic tunnel junction element.

17. (New) The magnetic tunnel effect type magnetic head according to claim 16, wherein the conductive gap layer is formed from at least two nonmagnetic metal layers including a metal layer containing a metal element selected from Ta, Ti, Cr, W, Mo, V, Nb and Zr and a metal layer containing a metal element selected from Al, Pt, Cu and Au.

18. (New) A recorder/player which records and/or plays back a signal to and/or from a magnetic recording medium comprising:

a magnetic tunnel effect type magnetic head having a magnetic tunnel junction element sandwiched with conductive gap layers between a pair of magnetic shielding layers,

wherein at least one of the conductive gap layers is formed from at least one nonmagnetic metal layer containing a metal element selected from Ta, Ti, Cr, W, Mo, V, Nb and Zr, and wherein the upper conductive gap layer forms a projection which abuts a portion of the magnetic tunnel junction element.

19. (New) The recorder/player according to claim 18, wherein the conductive gap layer is formed from at least two nonmagnetic metal layers including a metal layer containing a metal element selected from Ta, Ti, Cr, W, Mo, V, Nb and Zr and a metal layer containing a metal element selected from Al, Pt, Cu and Au.

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